

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The Examiner is kindly asked to consider the documents cited in the Second Information Disclosure Statement filed on August 31, 2007.

Appreciation is expressed to the Examiner for acknowledging receipt of the certified copy of the Japanese Application No. 2001-227045 filed on July 27, 2001 upon which the present application claims priority. The comments at the bottom page two and the top of three of the Official Action indicate that a claim for priority under 35 U.S.C. § 119(a) cannot be based on this Japanese application because the present application was filed more than 12 months after the Japanese priority application filing date. It appears there is an oversight.

This U.S. application was filed as continuation application of International Application No. PCT/JP02/07617 filed on July 26, 2002. Thus, the international application was filed within one year of the Japanese priority application, and the present application was filed within thirty months of the Japanese application filing date. Thus, applicant is entitled to claim priority to the Japanese application. The Examiner is kindly asked to note in the next official communication that the claim for priority to the Japanese application is proper. In the event the Examiner still has concerns on this issue, the Examiner is asked to contact the undersigned.

By way of this Amendment, new Claims 44 and 45 are added. Thus, the claims currently pending in this application are Claims 18-45. Claims 18 and 37 are the only independent claims.

As discussed in prior responses, the subject matter of this application pertains to a cuff apparatus for measuring blood pressure in the left and right upper arms. The cuff apparatus comprises a chassis, a hollow cylindrical airbag received in the chassis for suppressing a flow of blood of a human body when compressed air is introduced into the airbag, a plurality of cushions in the airbag for causing the airbag to remain in an inflated state before compressed air is introduced into the airbag, and first and second microphones arranged in the airbag to oppose each other.

The Official Action sets forth a rejection of independent Claims 18 and 37 based on the disclosure in U.S. Patent No. 5,406,954 to *Tomita* in view of the disclosure in U.S. Patent No. 5,511,551 to *Sano et al.*

Tomita discloses an apparatus for detecting and displaying blood circulatory information. The reference discloses several versions of a cuff 200, 500 that is placed around the upper arm of the individual. The Official Action relies upon the embodiment of the cuff 500 shown in Fig. 13. In this embodiment, the cuff 500 includes a blood flow shutting bag 520, a forward detection bag 510 and a rear detection bag 530.

The Official Action states that *Tomita* discloses "first 530/613 and second 530/617 microphones, so that the first microphone 613 detects Korotkoff sounds at the right upper arm of the human body when the right upper arm is inserted through and covered with the hollow cylindrical airbag 520 and the compressed air is introduced into the airbag 520, and the second microphone 617 detects Korotkoff sounds at the right upper arm of the human body when the right upper arm is inserted through and covered with the hollow cylindrical airbag 520 and the compressed air is introduced into the airbag 520."

This quoted language refers to the first microphone 613 in *Tomita* that detects Korotkoff sounds at the right upper arm and the second microphone 617 that detects Korotkoff sounds at the right upper arm. However, the independent claims here recite that the first microphone detects Korotkoff sounds at the right upper arm while the second microphone detects Korotkoff sounds at the left upper arm.

The Official Action comments that Fig. 33 of *Tomita* (perhaps intended to be Fig. 34 of *Tomita*) shows a cuff apparatus that measures blood pressure in the right and left upper arms. Actually, what Fig. 34 of *Tomita* shows is two cuffs 500, 500 fitted to respective arms of the patient. The distinction is important as discussed below.

The Official Action takes the position that the rear sound wave sensor 613 shown in Fig. 33 of *Tomita* corresponds to the first microphone recited in Claims 18 and 37, and that the rear sound wave sensor 617 corresponds to the second microphone recited in Claims 18 and 37. However, *Tomita* does not disclose that the rear sound wave sensors 613, 617 are provided on the same cuff. In fact, the discussion in lines 20-65 of column 29 of *Tomita* makes clear that the rear sound wave sensor 613 is connected to the rear bag 530 of the cuff 500 on one arm while the other rear sound wave sensor 617 is connected to the rear bag 530 of the cuff 500 on the other arm of the patient. Thus, *Tomita* does not disclose a cuff that includes first and second microphones as recited in independent Claims 18 and 37.

In addition, independent Claim 18 recites that the first and second microphones are arranged in the airbag to oppose each other so that the first microphone detects Korotkoff sounds at the right upper arm while the second microphone detects Korotkoff sounds at the left upper arm. Independent Claim 37

recites first and second microphones positioned in facing relation to one another at diametrically opposite positions across the upper arm receiving space, with the first microphone detecting Korotkoff sounds at the right upper arm and the second microphone detecting Korotkoff sounds at the left upper arm. There is no disclosure in *Tomita* of positioning two microphones to oppose each other as recited in Claim 18 and in facing relation to one another at diametrically opposite positions across an upper arm receiving space as recited in Claim 37. Indeed, as mentioned above, the rear sound wave sensors 613, 617 are connected to respective rear bags 530, 530 on different cuffs.

Further, independent Claim 18 recites that the first and second microphones are arranged in the airbag. In *Tamito*, the sensors 613, 617 are not arranged in the airbag 520, but rather are a part of the apparatus body 600 that is separate from the cuff 500 as is apparent from the description beginning at line 20 of column 29.

For at least the reasons set forth above, it is respectfully submitted that the reliance upon the disclosure in *Tomita* is misplaced.

The Official Action recognizes that the cuff 500 disclosed in *Tomita* does not include a plurality of cushions within the airbag as recited in the independent claims. To address this deficiency, the Official Action relies upon *Sano et al.* for its disclosure of protruding bodies 12. The Official Action takes the position that it would have been obvious to provide similar protruding bodies 12 in the bag 520 disclosed in *Tomita*. That position is respectfully traversed.

As explained previously, *Sano et al.* discloses a finger cuff for blood pressure meter that is specifically adapted to address perceived problems associated with other known finger cuffs. The discussion in the background portion of *Sano et al.*

describes various problems associated with conventional blood pressure finger cuffs, and notes in lines 16-17 of column 2 that the disclosed blood pressure meter cuff solves such problems. It is thus apparent that *Sano et al.*'s disclosure of using protruding bodies 112 is specifically intended to address perceived problems associated with blood pressure finger cuffs. *Tomita* does not disclose a blood pressure finger cuff and thus does not suffer from the problems sought to be addressed by *Sano et al.*'s use of protruding bodies. Consequently, one of ordinary skill in the art would have had no reason to include *Sano et al.*'s protruding bodies in the bag 520 of *Tomita*'s cuff.

Notwithstanding the foregoing, to further distinguish over a combination of the disclosures in *Tomita* and *Sano et al.*, the independent claims are amended to recite that the plurality of cushions includes a first cushion, a second cushion, a third cushion and an auxiliary cushion arranged in that order relative to the circumferential direction of the airbag. The independent claims also recite that the width of the first and third cushions is greater than the width of the second cushion and the auxiliary cushion. Further, the independent claims set forth that the auxiliary cushion possesses an increasing thickness in the lengthwise direction of the auxiliary cushion. Support for the language in Claims 18 and 37 can be found at, for example, the discussion beginning in the middle portion of page 15 of the present application and extending to the top portion of page 16. The application describes advantages associated with aspects of the invention now set forth in the independent claims such as the discussion in the middle portion of page 27 of the application.

Quite clearly, *Sano et al.* does not disclose first, second and third cushions, together with an auxiliary cushion, arranged in the claimed manner, where two of the

cushions have a width greater than two others, and where the auxiliary cushion possesses a thickness that increase in the length-wise direction. Indeed, in *Sano et al.*, all of the protruding bodies 12 have the same dimension and a constant thickness. This difference is at least in part attributable to the cushions being employed in the cuff apparatus at issue for a purpose not at all similar to Sano et al.'s reason for using the protruding bodies 12.

It is respectfully submitted that there is no reasons why an ordinarily skilled artisan would have combined the disclosures in *Tomita* and *Sano et al.* in the manner recited in the independent claims of the present application. Accordingly, withdrawal of the rejection of record is respectfully requested.

New dependent Claims 44 and 45 recite additional details associated with the first, second, third and auxiliary cushions. Quite clearly, there is no disclosure of configuring the protruding bodies disclosed in *Sano et al.* in the manner recited in these dependent claims.

The other dependent claims in this application set forth further distinguishing aspects of the cuff apparatus. For example, Claim 40 recites that each of the first, second and third cushions possess a wavy-shaped side opposing the inner circumferential surface of the airbag, and also recites that the auxiliary cushion possesses a side opposing the inner circumferential surface of the airbag that is not wavy-shaped. These features are not addressed in the Official Action. The Examiner is kindly asked to identify the side of the protruding bodies in *Tomita* that are wavy-shaped.

Claim 41 recites the circumferentially extending elastic band-shaped member that is attached to the inner side of the outer wall of the airbag at a position closer to

the inlet side of the airbag and the outlet side of the airbag. The Official Action states that the belt 1 in *Sano et al.* corresponds to the claimed elastic member. However, reference numeral "1" in *Sano et al.* simply identifies the overall belt forming the blood pressure cuff. It is not at all understood how this belt 1 constitutes an elastic band-shaped member that is attached to the inner side of the outer wall of the airbag at position closer to the inlet side than the outlet side. It is also not understood why one would add this belt 1 in *Sano et al.* to the cuff in *Tomita* since such a belt is unnecessary.

Claims 28 and 42 recite that each of the microphones is positioned in a pocket attached to the inner side of the inner wall of the airbag. With respect to Claim 42, the Official Action once again does not address this point. Considering that the sensors 613, 617 in *Tomita* are apparently formed as a part of a unit that is separate from the cuff 500, it is not understood how it can be said that the sensors 613, 617 should be positioned in the manner recited in Claim 42. The Examiner is respectfully requested to provide clarification on this point.

With respect to Claim 28, the Official Action refers to the disclosure in U.S. Patent No. 3,752,147 to *Castro et al.* However, this reference does not disclose microphones positioned in pockets attached to the inner side of the inner wall of an airbag. Quite the contrary, *Castro et al.* describes in lines 14-22 of column that a an affixing unit 15 (e.g., Velcro fastener) can be applied to the outer surface of the pad 13 to secure a transducer such as a microphone.

Claim 43 recites that the airbag is secured to the chassis by fasteners provided on the outer circumferential surface of the airbag. Claim 43 also recites that each fastener is positioned in a respective engagement hole provided in the

chassis, and at least one of the fasteners possesses a through hole communicating with the interior of the airbag to supply compressed air.

The Official Action states that the connector tube 5 in *Sano et al.* has a conduit for supplying compressed air. However, the Official Action does not explain how the connector tube 5 is a fastener provided on the outer circumferential surface of the airbag and does not describe how the connector tube 5 secures the airbag to a chassis. Once again, the Examiner is asked to provide clarification on this point.

Dependent Claim 21 recites that the microphones are attached to portions of the inner wall of the airbag at circumferential positions corresponding to the circumferential positions of the first and third cushions. As noted above, the sensors 613, 617 in *Tomita* are not attached to the airbag and are certainly not attached to portions of an inner wall of the airbag 520 at positions corresponding to the protruding portions 12 disclosed in *Sano et al.* Though the Official Action addresses Claim 21 by relying upon the disclosure in *Castro et al.*, it is not at all apparent how this tertiary reference teaches positioning the sensors 613, 617 in *Tomita* relative to the protruding bodies 12 in *Sano et al.* in the manner recited in Claim 21. The Examiner is kindly asked to provide an appropriate explanation.

In addition to defining the microphone-receiving pockets, Claim 42 defines a cable holder attached to the airbag at a position between the pockets, and a cable connecting the microphones and supported by the cable holder. The Official Action is silent on where these features recited in Claim 42 are disclosed in the cited references. The Examiner is asked to provide an appropriate explanation.

Claim 29 recites a cable holder attached to the airbag between the pockets, and a cable connecting the microphones and supported by the cable holder. The

Official Action states that *Castro et al.* discloses "means 15 for attaching or incorporating a microphone and/or its components, i.e. cable, to a surface of an airbag." However, *Castro et al.* does not disclose that the affixing unit 15 supports a cable. Further, the reference nowhere describes a cable holder between pockets that each contain a microphone. Thus, the rejection of Claim 29 is inappropriate.

The other dependent claims define further distinguishing features which, for the same of brevity, are not specifically discussed at this time.

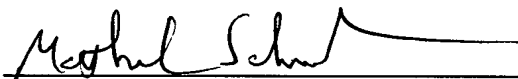
Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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Date: October 25, 2007

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